US Army Corps
of Engineers
Construction Engineering
Research Laboratory

USA-CERL TECHNICAL REPORT N-86/09 REVISED
June 1988
Pollution Abatement Alternative Technology
Selection System

The 'Discuss With Experts Environmental Problems' (DEEP) Knowledge-Based System: Description and User Guide

by
Diane K. Mann
Gloria Franczak
Lester Pritchard
Mark Cole

The Discuss with Experts Environmental Problems (DEEP) program is a knowledge-based system that offers military installation environmental personnel an easy, informal way to share problems, ideas for solutions, and information on the latest proven pollution abatement technologies. Many environmental problems are specific to geographical location, installation size, climate, or other variables; DEEP enables personnel at widespread geographic locations and diverse levels within the military chain of command to identify common problems and focus on them. In addition, the system contains listings of experts, environmental personnel at each installation, and recommended training courses; call-in information services; and a catalog of installation-specific, unpublished documents that users can order for use as guides in writing their own assessments, contracts, permits, and programs.

This revision supersedes the report dated March 1986. It includes an updated list of topics available in the DEEP knowledge base. This revision also includes additional user commands and demonstrates their use in example sessions.

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The Discuss with Experts Environmental Problems (DEEP) program is a knowledge-based system that offers military installation environmental personnel an easy, informal way to share problems, ideas for solutions, and information on the latest proven pollution abatement technologies. Many environmental problems are specific to geographical location, installation size, climate, or other variables; DEEP enables personnel at widespread geographic locations and diverse levels within the military chain of command to identify common problems and focus on them. In addition, the system contains listings of experts, environmental personnel at each installation, and recommended training courses; call-in information services; and a catalog of installation-specific, unpublished documents that users can order for use as guides in writing their own assessments, contracts, permits, and programs.

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This revision supersedes the report dated March 1986. It includes an updated list of topics available in the DEEP knowledge base. This revision also includes additional user commands and demonstrates their use in example sessions.

FOREWORD

This work was performed for the Office of the Assistant Chief of Engineers (OACE) under RDT&E Project 4A762720A896, "Environmental Quality for Construction and Operation of Military Facilities"; Task T2, "Pollution Control Technology"; Work Unit 008, "Pollution Abatement Alternative Technology Selection System."

Additional funding was supplied by Headquarters, U.S. Air Force, Environmental Office, under Work Unit JE8. The Air Force Technical Monitor was MAJ Ray Solomon.

This research was performed by the Environmental (EN) Division, U.S. Army Construction Engineering Research Laboratory (USA-CERL). Dr. R.K. Jain is Chief of USA-CERL-EN. The Technical Editor was Gloria J. Wienke, USA-CERL Information Management Office.

COL Norman C. Hintz is Commander and Director of USA-CERL, and Dr. L.R. Shaffer is Technical Director.

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THE 'DISCUSS WITH EXPERTS ENVIRONMENTAL PROBLEMS' (DEEP) KNOWLEDGE-BASED SYSTEM: DESCRIPTION AND USER GUIDE

1 INTRODUCTION

Background

Army Regulation (AR) 200-1 and Air Force Regulation (AFR) 19-1 require the respective military installations to institute environmental protection programs directed towards all environmental media.[1] Designing and implementing these programs is a process that goes far beyond constructing appropriate pollution abatement facilities. Treatment technologies are dynamic and their success depends on careful consideration of many variables. These variables range from the skill and knowledge of operations personnel at a particular installation to the current state-of-the-art limitations of the abatement process selected. The ability to provide effective environmental protection at a given military installation requires both knowledge of Air Force or Army activities/constraints and expert technical judgment by pollution abatement planners.

Several attempts have been made to provide data bases containing state-of-the-art information on alternative technological solutions to pollution problems and on military-unique environmental problems. One of these was the Army Pollution Abatement Program (APAP) data base, that the U.S. Army Corps of Engineers, Huntsville Division created by downloading from commercial bibliographic systems citations that seemed relevant to Army problems. In addition, the U.S. Army Construction Engineering Research Laboratory (USA-CERL) has done much work in developing "problems" and "solutions" data bases of various types in an attempt to address pieces of this puzzle.[2] Several of these data bases have been developed as a part of the Pollution Abatement Alternative Technology Selection (PAATS) System, which provides information on innovative and alternative approaches to pollution abatement and environmental management.

Earlier data bases designed specifically for military users and their problems had the advantage of being tailored to specific needs. However, the cost of creating and updating these specially adapted data bases has been overwhelming. Cost mounts with the continual monitoring of technical literature; with the analysis, abstraction, and indexing of data; and with the data input and updates necessary to keep the system current. An ideal program would offer data bases relevant to Army and Air Force problems and policy, but without the high costs for monitoring and updating. With the

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[1] Army Regulation (AR) 200-1, *Environmental Protection and Enhancement* (Department of the Army, 15 June 1982); Air Force Regulation (AFR) 19-1, *Pollution Abatement and Environmental Quality* (Headquarters, U.S. Air Force, 9 January 1978).

[2] R. D. Webster, et al., *Pollution Abatement Management System*, TR N-42/ADA055565 (U.S. Army Construction Engineering Research Laboratory [USA-CERL], 1978); J. G. Bandy et al., *Concept Definition of the Pest Management Component of the Pollution Abatement Management System*, TR N-122/ADA109720 (USA-CERL, 1982); M. Messenger et al., *The National Pollution Discharge Elimination System Permit Mangement System; Pilot System Description*, TR N-133/ADA119787 (USA-CERL, 1982); R. D. Webster et al., *Development of the Environmental Technical Information System*, TR E-52/ADA009668 (USA-CERL, 1975).

proliferation of office automation and the increased computer literacy of the user group, the potential exists for reducing data development and updating expenses.

Objective

The objective of this effort was to create a knowledge-based communication medium for environmental personnel to access information on the latest pollution abatement technologies and environmental management strategies. The system was to allow for self-contained updating, systematic analysis of alternatives, and selection of optimal technologies.

This revision supersedes the report with the same title and number, dated March 1986. It includes an updated list of topics available in the DEEP knowledge base. This revision also includes additional user commands and demonstrates their use in example sessions.

Approach

Information was collected from environmental officers and other environmental personnel at Air Force and Army installations. Their service requests, program expectations, and time constraints were used to modify and add features to a prototype system. Data obtained from environmentalists and statistics compiled on available technological data from installations were incorporated into a knowledge-based system.

The resulting system, Discuss with Experts Environmental Problems (DEEP), provides (1) a vehicle for communication among environmental personnel, (2) a data base for user contributions and updates, and (3) a variety of information services that can be continuously expanded.

Mode of Technology Transfer

After field testing of DEEP by environmental personnel in the Air Force and the Army, the system will be fielded as part of the Environmental Technical Information System (ETIS).

2 STRUCTURE AND CONTENT

The DEEP Knowledge Base

A knowledge base is an organized collection of information, stored on a computer, that focuses on a particular subject. Although the function of a knowledge base is as an information resource for focusing and refining any number of inquiries into a given topic, it is not a static collection of facts. A knowledge-based system such as DEEP is dynamic and constantly evolving; users actively expand the available store of information by posing and answering questions and making comments on specific topics. A knowledge-based system is a means for managing new ideas as well as a means for storing existing facts.

Knowledge-based systems such as DEEP, which allow user questions, answers, and comments can become self-updating through vigorous use. The fundamental requirement is a broad pool of expertise among the users. Such broad expertise exists among the personnel in Corps offices, military installations, and educational institutions. For example, an entomologist may be on the staff at an Army environmental office, while a hydrologist may be on the staff at an Air Force environmental office. Indications are that collective expertise covers a wide range with many years of experience in different specializations. This experience is invaluable to new people in similar positions at other offices. DEEP offers a quick and easy method of sharing this expertise. A user-active system with the input of experienced and trained environmental personnel assures currency with the latest technologies available for dealing with resources problems and management programs.

Additional features include a catalog of installation-specific unpublished documents, a rated list of environmental courses, a library of rated publications, call-in information services, and computerized information resources.

Knowledge Base Structure

The current structure of the DEEP knowledge base is shown below. The listing is meant only to indicate the broad areas that may be addressed in each section. It is important to emphasize that while this is the current structure, it is completely dynamic and user-driven and thus subject to constant change. The DEEP software supports creation of subtopics at any time by any user and of new topics by the director acting upon the users' suggestions.

	Topic	Description
1.	air	Air Pollution.
2.	asbestos	Problems and solutions.
3.	conserve	Conservation and wildlife.
4.	culture	CRIS and Cultural Resources (Archeologic and Historic).
5.	compliance	ECAMP, ERMA, and other compliance information.
6.	manage	Management of Environmental Programs.

7.	noise	ICUZ and other Noise Programs.
8.	resource	Resource Recovery.
9.	solid	Solid Waste.
10.	water	Water and Wastewater.
11.	catalog	Lists unpublished, installation-specific documents.
12.	airforce	Environmental personnel at Air Force installations.
13.	expert	Experts available for giving help.
14.	army	Environmental personnel at Army Installations.
15.	library	Ratings of courses, literature, and services.
16.	listings	Temporary assignments and position openings.
17.	comment	Comments/suggestions on topic areas or program use.

3 USER INSTRUCTIONS

DEEP is available as an experimental profile of ETIS. ETIS can be accessed over WATS, TELENET, and commercial telephone lines using almost any kind of computer terminal (see Appendix A).

Accessing ETIS

After assembling a remote terminal, a modem, a connection to a telephone line, and acquiring a login and password from USA-CERL's Environmental Division, ETIS can be accessed by a remote terminal. Dial the system's number (217/333-5067, WATS 800/637-0958). If there is no answer, the entire system is down for maintenance. Upon hearing a steady tone, connect your terminal/modem to the ETIS system as indicated in the manufacturer's instructions. After logging in with the correct name and password, you will receive system messages. Type "etis" at the prompt to start the system. DEEP is one of the systems under Miscellaneous in the main ETIS menu.

General ETIS Commands

These commands can be used throughout ETIS. The items in the left column show how the command is referred to.

<cr> or RETURN	When instructed to do so, depress the return key to initiate the next action.
Ctrl-d	Simultaneously press the control key and the letter d, to exit immediately to the ETIS login.
Ctrl-h	Use this to correct an input error--if the return key has not been pressed. It backs up the cursor one space at a time, erasing each character. This can be done as many times as necessary. Every symbol that has been backspaced over has been removed from the terminal memory. Therefore, if the first digit of a six-digit number has been mistyped, you must depress Ctrl-h six times and then retype all six digits. The corrected symbols will be overprinted on the paper or screen.
Del or Ctrl-s	To stop a long listing, depress the key marked Del (delete) or type a Ctrl-s.
Ctrl-q	If ctrl-s is used, a ctrl-q is necessary to start the listing again.

A path can be set up in your directory that will take you directly into DEEP. After logging in with the correct name and password, all you have to do is type "deep" at the ETIS prompt to enter DEEP without going through the ETIS menu.

The DEEP Software

After the DEEP system has been started, the following menu appears and the appropriate command is typed to accomplish the option desired:

DEEP Command (RETURN to see list):

Type:	To:
talk	Read and write comments on environmental topics.
new	Look at new comments.
pick	Limit the list of topics to read with new command.
help	Instructions on use.
bye	Leave the system.

The complete knowledge bases discussed in Chapter 2 are accessed by choosing "talk" from the menu (see Appendix B). In "talk", notes and responses are entered by using an editor. The DEEP editor is a simple data input routine that accepts one line of input at a time and is ended by putting a period on a line by itself (see Appendix C). DEEP users who are familiar with one of the UNIX editors can specify their preference for those routines when requesting a login to ETIS.

To see only those parts of the knowledge bases that are new since the last access, start the system using the "new" command (see Appendix D) after setting up "pick." If only certain knowledge bases are used routinely, such as hazardous waste and air, the "pick" command is used to select these two knowledge bases. Then every time the "new" command is entered, only those two knowledge bases will be checked for new traffic. The complete listing of knowledge bases can still be accessed by using the "talk" command. The number and combination of knowledge bases selected in "pick" can be altered at any time.

The UNIX "notes" software has been used as a basis for the DEEP system. Complete documentation of the features of this software can be found in the *Notesfile Reference Manual.*[3]

Commands for reading and writing comments while using the "talk" option:

Use:	To:
space	Show the next page of the note/response.
<CR>	Go to the next note ignoring any response(s) to the current note.

[3]Raymond B. Essick and Rob Kolstad, *Notesfile Reference Manual*, TR #U1UCDCS-R-82-1081 (University of Illinois, September 8, 1982).

-	Go back one screen. If used at the first page of a base note, go to the previous note. If used at the first page of a response, go to the previous response (or the base note from the first response).
w	If typed while looking at a screen of topics, enters a new topic. If typed while looking at note or a note response, enters a response.
i	Return to the list of topics for the major title presently entered.
q	Leave the current topic, go back to the main menu.
Ctrl-d	Return to computer command level, ignoring any further notesfiles in DEEP. No "new" informtion is updated.

Commands for reading comments while using the "new" option:

Use:	To:
j	Jump to the next unread note/response.
J	Jump to the next unread note, ignoring any further responses in the current note string.

4 SUMMARY

This report describes a knowledge-based communication system for use by environmental personnel to access information on the latest technologies related to their field. The *DEEP* knowledge base has been designed to tap the expertise in the Corps of Engineers District and Division offices, the environmental offices at military installations, and various departments at educational institutions by providing an efficient mechanism for enhancing communication among them.

APPENDIX A:

DIALING INTO THE ETIS SYSTEM

To call the computer that DEEP and ETIS run on:

1. Turn on power switches to terminal and modem.

2. Type AT (in capital letters) on your terminal. This command tells the Hayes modem to pay ATtention. The response OK should appear on the screen.

3. Type ATDT followed by the appropriate phone number.

The method of access is shown below. Commands that the user types are in bold print.

AT
OK
ATDT9,18006370958
CONNECT
<CR>
U of I Computing Services Office VAX 11/780 (uiucuxc)
4.2 BSD Unix /dev/ttyxx

login: apache
Password: GeroniMO

APPENDIX B:

EXAMPLE SESSION

Following is an example session from the DEEP system that portrays the type of interaction the system is designed to support. The horizontal lines set off the contents of a single screen. User inputs are in bold print.

ASK AN *EXPERT* - *BE AN EXPERT*

DEEP (Discuss with Experts Environmental Problems) provides easy, informal communication among environmental personnel to identify similar problems, propose solutions, and relay latest proven technologies. The experience and expertise of users builds and updates the data bank.

Creators and users of alternative and innovative technologies are easily accessible because their names and telephone numbers are provided by DEEP plus a description of the environmental staff of each installation.

In addition, copies from a list of unpublished, installation-specific documents can be ordered for use as patterns. Training courses, special services, and library materials are described and rated by users.

Questions about the use of the system should be directed to Dr. Diane Mann at comm 800-USA-CERL.

DEEP Command (RETURN to see list): **<cr>**

Type:	To:
talk	Read and write comments on environmental topics.
new	Look at new comments.
pick	Limit the list of topics to read with the 'new' command.
help	Instructions on use.

DEEP Command (RETURN to see list): **talk <cr>**

	Title:	Description:
1.	air	Air Pollution.
2.	asbestos	Problems and solutions.
3.	conserve	Conservation and wildlife.
4.	culture	CRIS and Cultural Resources (Archeologic/Historic).
5.	compliance	ECAMP, ERMA, and other compliance information.
6.	manage	Management of Environmental Programs.
7.	noise	ICUZ and other Noise Programs.
8.	resource	Resource Recovery.
9.	solid	Solid Waste.
10.	water	Water and Wastewater.
11.	catalog	Lists unpublished, installation-specific documents.
12.	airforce	Environmental personnel at Air Force installations.
13.	expert	Experts available for giving help.
14.	army	Environmental personnel at Army Installations.
15.	library	Ratings of courses, literature and services.
16.	listings	Temporary assignments and position openings.
17.	comment	Comments/suggestions on topic areas or program use.

Type 'quit' to leave menu.

Enter title: **2 <cr>**

---

paats.asbestos		11:19 am Jan 14, 1988
5/30/86	1 DEMOLITION INFO SOURCE	Anonymous
6/16	2 Info. need	2 afornl7@osiris.CSO.UIUC.ED

**** End of Notes ****

(type) **2 <cr>**

Read note > 2

Note 2	paats.asbestos	2 responses
afornl7	Info. need	9:13 am Jun 16, 1986
	(at osiris.CSO.UIUC.EDU)	

I could use info. in requirements for asbestos disposal and available disposal sites in upper peninsula of Michigan or nearby Wis.

(press the space bar once)

Note 2 paats.asbestos
Anonymous Response 1 of 2

The DRMO (used to be Property Disposal Office) is now responsible for contracting for waste asbestos disposal. Fill out a DD 1348 and send paperwork to closest DRMO.
Hal Balbach - CERL

(press the space bar once.)

Note 2 paats.asbestos
dmann Response 2 of 2 11:59 am Sep 8, 1986
(at osiris.CSO.UIUC.EDU)

Nearest -- is probably Ohio.

(type) **q**

	Title:	Description:
1.	air	Air Pollution.
2.	asbestos	Problems and solutions.
3.	conserve	Conservation and wildlife.
4.	culture	CRIS and Cultural Resources (Archeologic/Historical).
5.	compliance	ECAMP, ERMA, and other compliance information.
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16.	listings	Temporary assignments and position openings.
17.	comment	Comments/suggestions on topic areas or program use.

Type 'quit' to leave menu.

Enter title: **6 <cr>**

---

paats.manage		9:21 am Nov 19, 1987
11/12/85	1 ENERGY CONTACTS	2fmmcoy@osiris
8/18/86	2 WASTE MANAGEMENT USING CATTAILS	1dmann@osiris
8/31/87	3 FORT BLISS ONLINE	Anonymous
9/16	4 Chloro fluoro carbons	fdevens

**** End of Notes ****

Read note > **2** **<cr>**

Note 2	paats.manage	1 response
dmann	WASTE MANAGEMENT USING CATTAILS	7:45 am Aug 18, 1986

CATTAILS CURATIVE POWERS

Cattails remove iron and other metals from the water and neutralize acid. Because of these curative powers, the lowly cattail has become a favored plant of environmentalists and coal operators working to curb the toxic damage of acid drainage from mines.

The method is still experimental, but about 40 cattail marshes have been started in the last three years. Officials estimate that 100 will be planted this year, stretching from Pennsylvania to Alabama. Others are being established in Montana and Colorado.

According to estimates, the mining industry is spending $1 million a day to treat acid mine drainage. Other than wetlands, no other technology is available that is cheap, low-maintenance and applicable. Acid drainage is now being treated with caustic soda or limestone, which neutralizes the discharge. A marsh can be built from scratch for about $20,000, depending on the size.

A 90% success rate for removing iron and a 70% success rate for lowering manganese has been reported. Wetlands can also be used to treat industrial wastes and leaching from sanitary landfills.

<cr> (Because <cr> return is hit instead of space bar, the next note is brought up and the response to note 2 is skipped over)

Note 3 paats.manage
Anonymous FORT BLISS ONLINE 1:57 pm Aug 31, 1987

Fort Bliss finally is online!!! All the people listed on the installation "roster" are available for discussion. These include Ralph Nickolas for asbestos, hazardous waste, etc.; Glen DeGarmo for historic resources; and Kevin VonFinger/Brett Russel for ecological/training area management topics. Hope we can participate in some good discussions. Give us a call.

---

q

Topic menu appears again.

Enter title: **quit <cr>**

Main menu appears.

bye <cr>

Session ended.

APPENDIX C:

EXAMPLE SESSION FOR WRITING

Following is an example session from the DEEP system that demonstrates how to write in DEEP at the (1) response or (2) note level. The horizontal lines set off the contents of a single screen. User inputs are in bold print.

(1) To write at the response level:

ASK AN EXPERT - BE AN EXPERT

DEEP (Discuss with Experts Environmental Problems) provides easy, informal communication among environmental personnel to identify similar problems, propose solutions, and relay latest proven technologies. The experience and expertise of users builds and updates the data bank.

Creators and users of alternative and innovative technologies are easily accessible because their names and telephone numbers are provided by DEEP plus a description of the environmental staff of each installation.

In addition, copies from a list of unpublished, installation-specific documents can be ordered for use as patterns. Training courses, special services, and library materials are described and rated by users.

Questions about the use of the system should be directed to Dr. Diane Mann at comm 800-USA-CERL.
DEEP Command (RETURN to see list): **<cr>**

Type:	To:
talk	Read and write comments on environmental topics.
new	Look at new comments.
pick	Limit the list of topics to read with the 'new' command.
help	Instructions on use.

DEEP Command (RETURN to see list): **talk <cr>**

	Title:	Description:
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15.	library	Ratings of courses, literature, and services.
16.	listings	Temporary assignments and position openings.
17.	comment	Comments/suggestions on topic areas or program use.

Type 'quit' to leave menu.

Enter title: **1 <cr>**

---

paats.air 9:26 am Nov 19, 1987

8/19/85	1*CAR EMISSIONS INSPECTION	3Anonymous
4/27/87	2 REDUCTION IN AIRBORNE LEAD	dmann
9/30	3 CHANGE IN PARTICULATE STANDARD	Anonymous

**** End of Notes ****

(type) **2 <cr>**

Read note > 2

Note 2 paats.air
dmann REDUCTION IN AIRBORNE LEAD 8:20 am Apr 27, 1987

Levels of lead in the atmosphere declined 32% between 1984 and 1985 and have dropped 79% since 1976, according to the latest annual survey of air quality trends by the Environmental Protection Agency. The sharp drop in ambient lead levels is due to an 86% reduction in lead emissions since 1976, a direct result of the switch to unleaded gasoline and reduction of lead in leaded gasoline for automobiles, EPA said. Motor vehicles still contribute 73% of the lead air emissions.

(type) **w**

(Typing **w** while reading a note starts the process for writing a response to that note. After the response is typed, the user goes to a blank line and types a period to enter the response into the bulletin board)

Edit Response Text:
Enter Message. When done enter a period (.) on a new line.

This is only a test.

(type) .

Do you wish this response to be anonymous? (y/n): (type) **y**
Do you REALLY wish this response to be anonymous? (y/n): (type) **y**

(Now you will be shown how the message appears.)

Note 2 paats.air
Anonymous Response 4 of 4 9:26 am Nov 19, 1987

This is only a test.

(type) **i**

(Now you can see the change in the number of responses.)

---

paats.air 9:28 am Nov 19, 1987

8/19/85	1*CAR EMISSIONS INSPECTION	3Anonymous
4/27/87	2 REDUCTION IN AIRBORNE LEAD	1dmann
9/30	3 CHANGE IN PARTICULATE STANDARD	Anonymous

**** End of Notes ****

(type) **q**

(Now you will receive the Title menu.)

(2) To write at the note level:

	Title:	Description:
1.	air	Air Pollution.
2.	asbestos	Problems and solutions.
3.	conserve	Conservation and wildlife.
4.	culture	CRIS and Cultural Resources (Archeologic and Historic).
5.	compliance	ECAMP, ERMA, and other compliance information.
6.	manage	Management of Environmental Programs.
7.	noise	ICUZ and other Noise Programs.
8.	resource	Resource Recovery.
9.	solid	Solid Waste.
10.	water	Water and Wastewater.
11.	catalog	Lists unpublished, installation-specific documents.
12.	airforce	Environmental personnel at Air Force installations.
13.	expert	Experts available for giving help.
14.	army	Environmental personnel at Army Installations.
15.	library	Ratings of courses, literature, and services.
16.	listings	Temporary assignments and position openings.
17.	comment	Comments/suggestions on topic areas or program use.

Type 'quit' to leave menu.

Enter title: **1 <cr>**

---

paats.air 9:33 am Nov 19, 1987

8/19/85	1*CAR EMISSIONS INSPECTION	3Anonymous
4/27/87	2 REDUCTION IN AIRBORNE LEAD	1dmann
9/30	3 CHANGE IN PARTICULATE STANDARD	1Anonymous

**** End of Notes ****

(Type:) **w <cr>**

(Typing **w** while viewing the Note-List Menu begins the process for writing a note. After the note is typed, the user goes to a blank line and types a period to enter the note into the bulletin board.)

Edit Note Text: Enter Message. When done enter a period (.) on a new line.

This is a test.

(type) .

Do you wish this note to be anonymous? (y/n): (type) **y**
Do you REALLY wish this note to be anonymous? (y/n): (type) **y**

Note Title: (type) **TEST**

(Now you will be shown how the message appears.)

Note 4 paats.air
anonymous TEST 9:39 am Nov 19, 1987

This is a test

(type) i

(Now you will see the new note [number 4] in the list.)

---

paats.air 9:33 am Nov 19, 1987

8/19/85	1*CAR EMISSIONS INSPECTION	3Anonymous
4/27/87	2 REDUCTION IN AIRBORNE LEAD	1dmann
9/30	3 CHANGE IN PARTICULATE STANDARD	1Anonymous
11/19	4 TEST	Anonymous

**** End of Notes ****

Enter title: **q** <cr>

	Title:	Description:
1.	air	Air Pollution.
2.	asbestos	Problems and solutions.
3.	conserve	Conservation and wildlife.
4.	culture	CRIS and Cultural Resources (Archeologic and Historic).
5.	compliance	ECAMP, ERMA, and other compliance information.
6.	manage	Management of Environmental Programs.
7.	noise	ICUZ and other Noise Programs.
8.	resource	Resource Recovery.
9.	solid	Solid Waste.
10.	water	Water and Wastewater.
11.	catalog	Lists unpublished, installation-specific documents.
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14.	army	Environmental personnel at Army Installations.
15.	library	Ratings of courses, literature, and services.
16.	listings	Temporary assignments and position openings.
17.	comment	Comments/suggestions on topic areas or program use.

Type 'quit' to leave menu.

Enter title: **quit** **<cr>**

DEEP command (RETURN to see list):

Type:	To:
talk	Read and write comments on environmental topics.
new	Look at new comments.
pick	Limit the list of topics to read with the 'new' command.
help	Instructions on use.
bye	Leave the system.

DEEP command (RETURN to see list): (type) **bye** **<cr>**

Session ended.

APPENDIX C:

EXAMPLE SESSION FOR PICK AND NEW

PICK and **NEW**, two of the four options listed in the main menu, are important time-savers for the regular user. Following is an example session from the DEEP system that demonstrates how to use **PICK** and **NEW** in DEEP. The horizontal lines set off the contents of a single screen. *User inputs are in bold print.*

ASK AN EXPERT - BE AN EXPERT

DEEP (Discuss with Experts Environmental Problems) provides easy, informal communication among environmental personnel to identify similar problems, propose solutions, and relay latest proven technologies. The experience and expertise of users builds and updates the data bank.

Creators and users of alternative and innovative technologies are easily accessible because their names and telephone numbers are provided by DEEP plus a description of the environmental staff of each installation.

In addition, copies from a list of unpublished, installation-specific documents can be ordered for use as patterns. Training courses, special services, and library materials are described and rated by users.

Questions about the use of the system should be directed to Dr. Diane Mann at comm 800-USA-CERL.

DEEP Command (RETURN to see list): **<cr>**

Type:	To:
talk	Read and write comments on environmental topics.
new	Look at new comments.
pick	Limit the list of topics to read with the 'new' command.
help	Instructions on use.
bye	Leave the system.

DEEP Command (RETURN to see list): **pick <cr>**

```
        air
New file.  Add it? y
        asbestos
File exists.  Keep it? y
        conserve
New file.  Add it? y
        culture
New file.  Add it? y
        airforce
File exists.  Keep it? y
        manage
File exists.  Keep it? y
        noise
File exists.  Keep it? y
        resource
New file.  Add it? y
        solid
New file.  Add it? y
        water
New file.  Add it? y
        compliance
New file.  Add it? y
        catalog
New file.  Add it? y
        expert
File exists.  Keep it? y
        army
New file.  Add it? y
        library
New file.  Add it? y
        listings
New file.  Add it? y
        comment
New file.  Add it? y
```

DEEP Command (RETURN to see list): **new** <cr>

(If no new responses or notes have been added since the user last used the bulletin board, the file titles will be going through very rapidly)

paats.**********

(The *s represent the titles that will be flashed very quickly; these titles may include:
paats.asbestos
paats.conserve
paats.resource
paats.solid
paats.water
paats.catalog
etc.
paats.expert

(At the end you will again receive the command prompt)

DEEP Command (RETURN to see list): **bye** <cr>

(User types bye and completes a check of the bulletin board in less than ten seconds if there are no new entries since the last use of the bulletin board.)

Session ended.

(The following example illustrates the use of **NEW**, from the main menu, if a new note has been added since the user last used the bulletin board. Titles will quickly flash by on the screen until the title of the section in which the new note exists is reached.)

Note 1 paats.airforce
dmann ECAMP Revision

Revision of the ECAMP manual updating sections to 30 November 1987 is being printed and will soon be distributed. A new section - Section X - has been added entitled Natural and Historic Resources Management.

(type) **q**

paats.********* (The *s represent the titles that are flashed quickly.)

DEEP Command (RETURN to see list): **bye** <cr>

(The following example illustrates the use of **NEW** if a new response has been added since the user last used the bulletin board. Titles will flash by quickly on the screen until the title of the section in which the note with the new response exists is reached. When the note appears on the screen, the user must strike the space bar until new response appears on the screen. If the new response is the second response, the user needs to strike the space bar twice; once to move from the note to response 1 and once to move from response 1 to the new response.)

Note 4 paats.water
afguest Aquifer cleanup

Question: Does a methodology exist which determines the most cost effective location and number of plumbing wells when restoring an aquifer by pumping and treating the ground water?

(Now press the space bar once)

Note 4 paats.water
afguest Response 1 of 4 3:39 pm Feb 12, 1987

Question: Does a methodology exist which determines the most cost effective pumping scheme, that is, what should be the pumping rates, should the rates vary with different wells, should pumping be intermittent?

(Now press the space bar again)

Note 4 paats.water
afguest Response 2 of 4 3:48 pm Feb 12, 1987

Question: Will the concentration of a contaminant in an aquifer increase by desorption if pumping is stopped, and could intermittent pumping allow one to pump when the concentration of the contaminant is high? AFGUEST for last 3 questions is

Lt. Mike Elliott,
HQ. AFFSC/RDVW,
Tyndall, AFB FL. 32403
Phone number (904) 283-4628
Autovon 970-4628

DEEP Command (RETURN to see list): **bye** <cr>

End of Session.

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443 ABG/DE
Altus AFB, OK 73923-5436

43 CSG/DEEV
Anderson AFB APO 96334-5000

HQAFSC/DEV
Andrews AFB, MD 20334-5000

1776 ABW/DEEV
Andrews AFB, MD 20331-5000

AEDC/DEV
Arnold AFB, TN 37389

56 CSS/DEN
Avon Park AFR, FL 33225-5000

Environmental Office
Barksdale AFB, LA 71110-5000

9 CSG/DEEV
Beale AFB, CA 95903-5000

67 CSG/DEEV
Bergstrom AFB, TX 78743

343 CSG/DEEV
Bielson AFB, AK 99702

97 CSG/DEEV
Blytheville AFB, AR 72317-5000

6570 ABG/DE
Brooks AFB, TX 78235-5000

27 CSG/DEEV
Cannon AFB, NM 88103

7 CSG/DEEV
Carswell AFB, TX 76127-5000

93 BMW/CVE
Castle AFB, CA 95342-5000

437 ABG/DE
Charleston AFB, SC 29404-5045

3345 ABG/DE
Chanute AFB, IL 61868-5046

14 ABG/DE
Columbus AFB, MS 39701-5000

1010 CES/DEEV
Cheyenne Mountain AFS, CO 80912-5605

836 CSG/DEEV
Davis-Monthan AFB, AZ 85707-5000

94 CSG/DEEV
Dobbins AFB, GA 30069-5000

436 ABG/DE
Dover AFB, DE 19902-5516

96 CSG/DEEV
Dyess AFB, TX 76127-5000

AFFTC/DEV
Edwards AFB, CA 93523

44 CSG/DEEV
Ellsworth AFB, SD 57706-5000

HQ AAC/DEPV
Elmendorf AFB, AK 99506-5001

21 CSG/DEEV
Elmendorf AFB, AK 99506-5000

11 TCG/LGD
Elmendorf AFB, AK 99506

92 CSG/DEEV
Fairchild AFB, WA 99011-5000

831 CSG/DEV
George AFB, CA 92394-5000

3480 CES/DE
Goodfellow AFB, TX 76908-5000

321 CSG/DEEV
Grand Forks AFB, WA 58205-5000

416 CSG/DEEV
Griffiss AFB, NY 13441-5000

305 CSG/DEEV
Grissim AFB, IN 46971-5000

3245 ABG/DEEV
Hanscom AFB, MA 01731-5000

ESD/DEP
Hanscom AFB, MA 01731

2849 ABG/DEVW
Hill AFB, UT 84056

31 CSG/DEEV
Homestead AFB, FL 33039-5000

834 CSG/DE
Hurlburt Field, FL 32544-5000

3380 CES/DE
Keesler AFB, MS 39534-5000

SA ALC/EM
Kelly AFB, TX 78241

1606 ABW/DEEV
Kirkland AFB, NM 87117-5000

3700 ABG/DE
Lackland AFB, TX 78236-5000

HQ SAC/DEPV
Langley AFB, VA 23665-5001

47 ABG/DE
Laughlin AFB, TX 78843-5000

314 CSG/DE
Little Rock AFB, AR 72099-5000

42 CSG/DEEV
Loring AFB, ME 04751-5000

5D/DEV
Los Angeles AFB, CA 90009

3415 ABG/DE
Lowy AFB, CO 80230-5000

Environmental Office
Luke AFB, CA 85309-5000

56 CSG/DEEV
Macdill AFB, FL 33608

341 CSG/DEEV
Malstrom AFB, MT 59402-5000

22 CSG/DEEV
March AFB, CA 82518-5000

323 CES/DEEV
Mather AFB, CA 95655-5000

HQ AU/DEEV
Maxwell AFB, AL 36112-5001

62 ABG/DEEV
McChord AFB, WA 98438-5436

SM ALC/EM
McClellen AFB, CA 95652-5990

384 CSG/DEEV
McConnell AFB, KS 67221-5000

438 ABG/DE
McGuire AFB, NJ 08641

91 CSG/DEEV
Minot AFB, ND 58705-5000

347 CSG/DEEV
Moody AFB, GA 31699-5000

366 CSG/DEEV
Mt. Home AFB, ID 83648-5000

354 CSG/DEEV
Myrtle Beach AFB, SC 29579-5000

554 DESS/DESEP
Nellis AFB, NV 89191-5000

2803 ABG/DE
Newark AFB, OH 40357

63 ABG/DEEV
Norton AFB, CA 92409-5965

HQ SAC/DEV
Offut AFB, NE 68113-5001

55 CSG/DEEV
Offutt AFB, NE 68113-5000

509 CSG/DEEV
Pease AFB, NH 03803-5000

AFSPACECOM/DEPD
Peterson AFB, CO 80914-5001

3SSW/XREE
Peterson AFB, CO 80914-5000

1003 CES/DEEV
Peterson AFB, CO 80914-5000

HQ ATC/DEE
Randoph AFB, TX 78150-5001

12 ABG/DE
Randoph AFB, TX 78150-5001

64 ABG/DE
Reese AFB, TX 79489

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Scott AFB, IL 62225-5001

4 CSG/DEEV
Seymour Johnson AFB, NC 27531-5005

363 CSG/DEEV
Shaw AFB, SC 29152-5000

3750 ABG/DE
Sheppard AFB, TX 76311

325 CSG/DEEV
Tyndall AFB, FL 32403-5000

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USAF Academy, CO 80840-5841

71 ABG/DE and NW-DOM
Vance AFB, OK 73705-5000

1 STRAD/ET
Vandenberg AFB, CA 93437-5000

439 ABG/DE
Westover AFB, MA 01022-5000

351 CSG/DEEV
Whiteman AFB, MO 65305-5000

82 ABG/DEEV
Williams AFB, AZ 85240-5045

913 TAG/AFRES
Willowgrove AFB, PA 19090

HQ AFLC/DEV
Wright-Patterson AFB, OH 45433-5001

2750 ABW/EM and 2750 CES/DE
Wright-Patterson AFB, OH 45433-5000

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